

Bursty, Broadband Electromagnetic Waves Associated with Thin Current Layers and Turbulent Magnetosheath Reconnection

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We investigate observations of intense bursts of electromagnetic wave energy in association with the thin current layers of turbulent magnetosheath reconnection. These observed emissions form two distinct types: (i) broadband emissions that extend continuously to 10s of Hertz; and (ii) structured bursts of emitted energy that occur above 80-Hz, often displaying features reminiscent of absorption bands and are observed at local minima in the magnetic field. We present detailed analyses of these intense bursts of electromagnetic energy and quantify their proximity to X- and O-nulls, as well as their correlation to the amount of magnetic energy converted by the process of magnetic reconnection.